

### **Remarks**

This paper is responsive to the Final Office Action mailed March 7, 2006. Claims 1-3, 5, 7-15, 17-18, 20-27, and 30-33 are pending the present application and currently stand rejected. Claims 4, 16, 18-19, and 29 have been cancelled, obviating any of the rejections pertaining to these claims.

Support for the claim amendments may be found at least at FIGS. 5, 6, and 11, the Abstract, and at paragraphs 29, 31, 36, 38, and 48.

### **Claim Rejections - 35 U.S.C. § 102 (b)**

Claims 1, 8, 10, 14, 17, 19, 20, and 23-34 were rejected under 35 U.S.C. § 102 (b) as being anticipated by Gazco (Great Britain Patent 2,293,875), Matsushita (Japan Patent 59,097,416), Ecological (US Patent 3,685,946), Nabisco (US Patent 4,786,247), Hamilton (Great Britain Patent 387,751), and International Combustion Engineering (ICE) (US Patent 1,734,669) as applied in the Applicants' Great Britain Patent Application, GB0503003.6. Neither amended claims 1 nor 17 read upon what is taught, disclosed or suggested in the prior art references cited by the Examiner. None of the relied upon references anticipate the present claims.

Claims 1 and 17 are directed to a "fire display device" and a "method of altering the path of a flame," respectively. Claim 1 requires that the display device include "a secondary air assembly configured to change the flame path by directing the air stream towards the flame, the second air assembly including a rotating blade positioned below the combustion chamber, the blade adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame within the combustion chamber." Claim 17 further requires "altering the flame path by directing the secondary air stream towards the flame, wherein the secondary air stream is directed by rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame." Neither of these claims read on any of the references cited by the Examiner, which do not teach or disclose all of the limitations of the claimed invention.

Gazco Gazco does not include a fan. Gazco, rather, includes blocks 1 that form air ducts 22. The air ducts 22 direct a secondary air flow that changes the appearance of the flame in the region immediately adjacent to the ducts. Gazco does not include a "rotating blade" and does not include "altering a flame path" by "rotating a blade about a vertical axis." Gazco therefore does not teach

and disclose all of the claimed limitations of claims 1 and 17; claims 1 and 17 furthermore do not read upon the disclosure of Gazco.

Matsushita Matsushita includes a pull type combustion fan "at the downstream side of the burner for jetting out a secondary air to shorten a flame length. Secondary air is "forcibly jetted" to impinge against the flame "thereby significantly shortening the flame length and consequently eliminating the need of large space for the combustion chamber." In contrast, claim 1 requires a "rotating blade positioned below the combustion chamber" that is "adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame" and claim 17 requires "altering the flame path" by, in part, "rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame." The flame in the claimed invention is enhanced rather than shortened, and is enhanced by a blade positioned below the flame, Matsushita therefore does not teach or disclose all of the claimed limitations of claims 1 and 17; claims 1 and 17 furthermore do not read upon the disclosure Matsushita.

Ecological Ecological teaches and discloses a supplemental air supply to "increase the fuel combustion efficiency of furnace 12." Col. 2, lines 5-6. Similar to Matsushita, the purpose of the Ecological patent is to "produce a higher flame temperature with a more compact flame envelope." Col. 2, line 21. To accomplish a more compact flame, a conduit 28 ending in a ceramic sleeve 54 is positioned opposite to the fuel burner 16. This arrangement allows for the air coming from conduit 28 to impinge on the flame front 20 being emitted from the fuel burner 16 and to make it more compact. In contrast, claim 1 requires a "rotating blade positioned below the combustion chamber" that is "adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame" and claim 17 requires "altering the flame path" by, in part, "rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame." The flame in the claimed invention is enhanced rather than shortened, and is enhanced by a blade positioned below the flame. Ecological therefore does not teach or disclose all of the claimed limitations of claims 1 and 17; claims 1 and 17 furthermore do not read upon the disclosure in Ecological.

Nabisco Nabisco discloses a baking chamber where the burners include "air apertures 68 and 70" that produce jets of air that "converge inwardly towards a jet of gas" wherein the gas and air jets meet "along a single line 72." Col. 7, lines 20-31. The air jets of Nabisco allow for "very marked

elongation of the flame.” The flame produced is a very uniform and well defined flame flow, which is required for baking needs. In contrast, claim 1 requires a “rotating blade positioned below the combustion chamber” that is “adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame” and claim 17 requires “altering the flame path” by, in part, “rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame.” Nabisco does not include a rotating blade and does not create a turbulent flow to enhance the size of the flame. Rather, the Nabisco device produces a very uniform fluid flow. Nabisco therefore does not teach or disclose all of the claimed limitations of claims 1 and 17; claims 1 and 17 furthermore do not read upon the disclosure in Nabisco.

Hamilton Hamilton is similar to Ecological in that it forms “an air baffle” in the combustion chamber that is “directly opposite to the normal direction of the fuel jet.” Hamilton therefore does not teach or disclose all of the claimed limitations of claims 1 and 17 and claims 1 and 17 do not read upon Hamilton.

International Combustion Engineering (ICE) ICE discloses a furnace for burning pulverized fuel. The pulverized fuel is mixed with air and then injected into a combustion chamber “in a downward direction adjacent the front wall *a*.” Col. 1, lines 29-34. In addition, below the point where the flame is created, “secondary air is admitted into the combustion chamber” at a velocity “sufficiently high so that the air jets will penetrate well into the flame mass.” Col. 2, lines 65-75. In contrast, claim 1 requires a “rotating blade positioned below the combustion chamber” that is “adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame.” Claim 17 requires “altering the flame path” by, in part, “rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame.” ICE does not include a blade, and does not rotate a blade, to enhance the flame’s size. ICE therefore does not teach or disclose all of the claimed limitations of claims 1 and 17 and claims 1 and 17 do not read upon ICE.

In view of the foregoing, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 (b) is respectfully requested. Independent claims 1 and 17 do not read upon any of these references, nor do any of the references, alone or in combination, teach or disclose all of the claimed limitations.

In addition, claims 8, 10, 14, 20, and 23-24 depend from one of claims 1 and 17 and therefore incorporate all of the limitations of the base claim. Claims 8, 10, 14, 20, and 23-34 therefore are also allowable for at least the same reasons given above.

### **Claim Rejections - 35 U.S.C. § 103**

#### **The claims are not obvious over Hannebaum in view of Fleming**

Claims 1-3, 6-8, 10-14, 17, 18, 23-25, and 30-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hannebaum (US Patent 3,499,432) in view of Fleming (US Patent 5,678,534). The combination of Hannebaum and Fleming, however, does not teach or disclose all of the limitations of independent claims 1, 17, or 33; nor do claims 1, 17, and 33 read upon any combination of Hannebaum and Fleming.

Hannebaum discloses a fireplace housing including, among other things, a hollow vent tube 18 that includes a hollow tube plug 20 that can be slid in and out of tube 18 to "vary the area of the vent." Col. 1, lines 68-69. Fleming teaches a fire display/fireplace including artificial embers 30 and gas fuel nozzle 5 to provide an aesthetically pleasing effect.

Claim 1 requires a "rotating blade positioned below the combustion chamber" that is "adapted to rotate with sufficient speed to cause a turbulent air flow that enhances the size and shape of the flame." Claim 17 requires "altering the flame path" by, in part, "rotating a blade positioned below the combustion chamber about a vertical axis at a sufficient rate to create a turbulent air flow that enhances the size and shape of the flame." Claim 33 claims "rotating blade positioned below the combustion chamber" that is "adapted to rotate with sufficient speed to cause a turbulent air flow to enhance the size and shape of the flame." Neither Hannebaum nor Fleming teach, disclose, or suggest all of the claim limitations of claims 1, 17, or 33. Nothing in Hannebaum or Fleming teach a rotating blade positioned below the combustion chamber (claims 1 and 33) or rotating a blade positioned below the combustion chamber (claim 17). Moreover, the combination of Hannebaum and Fleming do not include structure that forms, or method of forming, turbulent air flow that enhances the size and shape of the flame. Claims 1, 17, and 33 therefore do not read upon the combination of Hannebaum and Fleming. In addition, claims 2-3, 6-8, 10-14, 18, 23-25, and 30-32 depend from one of claims 1, 17 and 33 and therefore incorporate all of the limitations of the base claim. Claims 2-3, 6-8, 10-14, 18, 23-25, and 30-32 therefore are also allowable for at least the same reasons given above.

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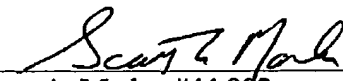
The claims are not obvious over Frink or Hannebaum in view of Fleming

Claims 5, 9, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Frink (US Patent Application Publication 2004/0261780) or Hannebaum in view of Fleming. However, claims 5 and 9 depend from independent claim 1, and claim 20 depends from independent claim 17. Claims 5, 9, and 20 are therefore allowable for at least the same reasons as claims 1 and 17. In view of the foregoing, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully solicited.

Conclusion

The pending claims are believed to be in condition for allowance. Reconsideration to that end and prompt passage of the application to allowance is respectfully solicited.

Respectfully Submitted,  
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